



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

James D. McININCH

Appl. No.: 09/698,213

Filed: October 30, 2000

For: Computational Nucleic Acid Coding
and Feature Analysis

Art Unit: 1631

Examiner: M. SHEINBERG

Atty. Docket: 16517.075

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Response to Restriction Requirement

Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the Office Action mailed November 6, 2001, Paper No. 10, wherein the period for reply was restarted as of February 12, 2002, Applicants submit the following response.

Remarks

In the Office Action mailed November 6, 2001, the Examiner required restriction to one of five groups of claims under 35 U.S.C. § 121 as follows.

I. Claims 1-16, 42, and 43, drawn to probability determination of one or more states for a nucleotide in a nucleic acid sequence, classified in class 435, subclass 6.

II. Claims 17-21, drawn to probability determination of strand coding of a nucleic acid sequence, classified in class 435, subclass 6.

III. Claims 22-28, drawn to probability determination of the extent of an open reading frame within a nucleic acid sequence, classified in class 435, subclass 6.

IV. Claims 29-34, drawn to probability determination of the location of insertions and deletions within a nucleic acid sequence, classified in class 435, subclass 6.

V. Claims 35-40, drawn to probability determination of exon location, classified in class 435, subclass 6.

The Examiner asserts that the inventions are distinct, each from the other because each grouping determines a different probability, *i.e.*, the probability of one or more states, the probability of strand coding, the probability of open reading frames, the probability of insertion and deletion location, and the probability of exon location. *Office Action mailed November 6, 2001* at page 3. Applicants respectfully traverse the restriction requirement, and provisionally elect the claims of Group I, claims 1-16, 42, and 43, drawn to a drawn to probability determination of one or more states for a nucleotide in a nucleic acid sequence for further prosecution.

Initially, it is noted that Claim 44 is not included in any of the groupings. However, it would appear that Claim 44 should be included in Group I. In the event that Applicants' understanding of the claim groupings is correct, Applicants confirm a provisional election of Group I, including claim 44 for further prosecution.

Applicants submit that the claims of Groups I to V are related in that the claims of Group I are directed to probability determination for one or more states for a nucleotide in a nucleic acid sequence, wherein those states include reading frame positive strands, reading frame negative strands, non-coding positive strands and non-coding negative strands. *See Claim 2*. The claims of Group II are directed to a method for determining strand coding, wherein the method includes determining the probability of one or more states of either a positive or a negative strand state. The claims of Group III are directed to a method for determining the extent of an open reading frame, wherein the method includes determining the probability of one or more states of either a coding or a non-coding state. The claims of Group IV are directed to a method for determining the location of insertions and deletions within a nucleic acid sequence, wherein the method includes determining the probability of one or more states of either a coding or a non-coding state. The claims of Group V are directed to a method for determining exon location within a nucleic acid sequence, wherein the method includes determining the probability of one or more states of either a coding or a non-coding state.

As such, it is submitted that the claims of Groups I to V are related in that they all involve determining the probability of one or more states, wherein those states relate to positive and negative strand states, coding and non-coding states; or a combination thereof.

Furthermore, Applicants submit that the complete examination of the application would be handled most expeditiously by treating all of the pending claims as a single entity. As Section 803 of the MPEP directs, "[i]f the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to distinct or independent inventions." Applicants respectfully submit that the Examiner has not shown that a search and examination of the entire application would cause a serious burden. Rather, a serious burden would arise if the application were restricted.

Based upon the foregoing, Applicants submit that the restriction requirement is improper and therefore must be withdrawn. To facilitate prosecution, however, Applicants have provisionally elected, with traverse, Group I (claims 1-16, 42, 43, and possibly 44).

In view of the above, each of the presently pending claims is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding restriction requirement and to pass this application to issue. Should the Examiner have any questions regarding this application, the Examiner is encouraged to contact Applicants' undersigned representative at (202) 942-5000. The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 50-1824, referencing Attorney Docket No. 16517.075.

Respectfully submitted,

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DATE: May 10, 2002

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